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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 08/636,706 | 04/23/1996 | ANN M. WOLLRATH | P1189 | 3311 |
| 22852 | 7590 | 07/23/2004 | EXAMINER | |
| FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005 | | | LAO, SUE X | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2126 | | |

DATE MAILED: 07/23/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 08/636,706 | WOLLRATH ET AL. |
| | Examiner | Art Unit |
| | S. Lao | 2126 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 February 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-33 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-33 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 42
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____ .

DETAILED ACTION

1. Claims 1-33 are pending. This action is in response to the response filed 2/6/2003.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-33 are rejected under the judicially created doctrine of obviousness - type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,654,793 to Wollrath et al in view of Hill et al (US Pat 5,511,197). As to claims 1, 11, 21, 31-33, Wollrath teaches for use in connection with a remote method invocation system (invoke remote method), a stub retrieval and loading subsystem for controlling the retrieval and loading of a stub (stub class instance) for a remote method into an

execution environment (client) to facilitate invocation of the remote method by a program executing in said execution environment, the stub retrieval subsystem comprising: A. a stub retriever to initiate a retrieval of said stub from a server associated with processing of said remote method, said stub used to facilitate remote invocation of said remote method (claim 1, lines 1-10), using the stub in remote invocation of said remote method (claim 1, lines 11-18). Wollrath does not teach element B. Hill teaches a stub loader configured to load said stub into said execution environment (client dynamically loads code to create an instance of the proxy) and stub used to facilitate remote invocation of remote method (RPC runtime invokes a method of the stub channel) [col. 6, line 65 -col. 7, line 54; col. 19, line 1-47]. In so doing, the stub is available for use. In the combined teaching, loading it would have been obvious to load after said stub is received by said stub retriever from said server because this makes the stub available for loading. One of ordinary skill in the art would have been motivated to combine the teachings of Wollrath and Hill because this would allow automatic generation of stubs from a class definition. As to claims 2, 12, 22, Wollrath teaches a remote method reference detector for detecting whether a remote method reference has been received in said execution environment, the stub retriever initiating retrieval of said stub when the remote method reference detector detects that a remote method reference has been received in said execution environment (claim 2, lines 2-4). As to claims 3, 13, 23, Wollrath teaches a remote method invocation control for controlling invocation of said remote method, said stub retriever initiating retrieval of said stub when the remote method is invoked (claim 1, lines 3-8). As to claims 4, 14, 24, Wollrath teaches a server for processing said remote method in response to a processing request therefor, the server further providing said stub in response to a retrieval request from said stub retriever (claim 1, lines 3-10). As to claims 5, 6, 15, 16, 25, 26, Wollrath teaches server provides a separate address space / separate computers for processing said remote method from an address space provided by said execution environment (claim 4, lines 1-2). It is noted that separate computers provide separate address spaces. As to claims 7, 8, 17, 18, 27, 28, Wollrath teaches a remote server identifier for providing a server identification for identifying said server (claim 1, lines 3-4), remote

method reference including a remote method server identifier, the remote server identifier using the remote method server identifier as the server identification (claim 1, lines 3-4, 7-8). As to claims 9, 10, 19, 20, 29, 30, Wollrath teaches remote method invocation control for providing a remote method invocation identification for controlling invocation of said remote method, the remote method invocation providing a remote method server identifier, the remote server identifier using the remote method server identifier as the server identification (claim 1, lines 3-4, 7-8), a nameserver for providing a said server identification, said remote server identifier initiating communication with said nameserver to obtain the serve identification for said remote method (claim 1, lines 3-8).

5. Claims 1, 4, 11, 14, 21, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (US Pat 5,511,197) in view of Lundin et al (US Pat 5,339,430).

It is noted that broadly as disclosed (application as filed, page 2, lines 21-24 and page 17, lines 16-17) a stub is an interface for invoking a particular remote program/procedure/method.

As per claims 1, 11, 21, Hill et al teach stub (proxy 303) of a remote method (object 301), a stub retriever (client) configured to retrieve stub information (client retrieves class identifier of the proxy) from a server (sent by server) associated with processing of remote method, stub loader for loading stub into execution environment (client dynamically loads code to create an instance of the proxy) and stub used to facilitate remote invocation of remote method (RPC runtime invokes a method of the stub channel) [col. 6, line 65 -col. 7, line 54; col. 19, line 1-47]. In so doing, the stub is available for use. It is noted that the proxy of Hill provides set of interface(s) for invoking / facilitating invocation of a particular remote method (server stub 302, remote object 301), therefore, meeting stub as claimed as well as disclosed (local stub). It would have been obvious that the stub retriever (client) initiates the retrieval process when it needs to (inter-node, vs. intra-node).

While in Hill the stub/interface includes identifier and code, Hill does not explicitly teach the stub information retrieved from a server includes both. Lundin teaches a client (client) retrieving (import) from a server (trader) an interface including both an identifier (X) and the code (produced by the Create method). See col. 12, lines 1-12, fig. 6. Therefore, it would have been obvious to include into the retrieved stub information / interface in Hill the identifier and the code. One of ordinary skill in the art would have been motivated to combine the teachings of Hill and Lundin because this would have obviated the need for storing symbolic information that would be subject to change (abstract).

As per claims 4, 14, 24, refer to claims 1, 11, 21 respectively for rejection. Further in Hill, the server processes the remote method (client accesses object 301) and provides the stub (send class identifier of the proxy). See col. 6, line 65 -col. 7, line 54.

6. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betz ("Interoperable objects: laying the foundation for distributed-object computing", Dr. Dobb's Journal, v19, n11, p18(13)) in view of Hill et al (US Pat 5,511,197) and Lundin et al (US Pat 5,339,430).

As per claims 31 and 32, Betz teaches computer (machine) [page 4 of enclosed copy, lines 14-22], stub (stub code) [page 3 of enclosed copy, first full paragraph of page; pages 7-8 of enclosed copy, section Architecture of the Orb].

However, Betz does not teach stub loader for controlling computer to load stub into execution environment to make stub available for use in remote invocation, stub retrieval module configured to control computer to initiate a retrieval of stub from a server associated with processing of remote method.

Hill et al teach stub retriever (client) configured to retrieve stub information (client retrieves class identifier of the proxy) from a server (sent by server) associated with processing of remote method, stub loader for loading stub into execution environment (client dynamically loads code to create an instance of the proxy) and stub used to facilitate remote invocation of remote method (RPC runtime invokes a method of the

stub channel) [col. 6, line 65 -col. 7, line 54; col. 19, line 1-47]. In so doing, the stub is available for use. It is noted that the proxy of Hill provides set of interface(s) for invoking / facilitating invocation of a particular remote method (server stub 302, remote object 301), therefore, meeting stub as claimed as well as disclosed (local stub). Further, Lundin teaches (see discussion of claim 1) a client (client) retrieving (import) from a server (trader) an interface including both an identifier (X) and the code (produced by the Create method). See col. 12, lines 1-12, fig. 6. Lundin the stub retriever (client) initiates the retrieval process (import call to trader). Note discussion of claim 1 for a motivation to combine Hill and Lundin.

Therefore, it would have been obvious to modify the system of Betz by implementing retrieval of stub and loading of stub because it provides it provides a mechanism for automatically generating stubs and proxies.

As per claim 33, refer to claim 31 for rejection and combination of references. It would have been obvious to embody these limitations as code store on a computer readable medium and executable by a computer.

7. Claims 3, 7-10, 13, 17-20, 23, 27-30 are rejected under 35 U.S.C 103(a) as being unpatentable over Hill et al in view of Lundin et al as applied to claims 1, 11 and 21 and further in view of Birrell et al ("Network Objects", 1994).

As per claim 3, Hill et al as modified do not explicitly teach remote method invocation control. Birrell et al teach remote method invocation control (object-oriented system which performs the steps for remote method invocation) [pp. 511,17-21,31-33,39-48]. It would have been obvious to include remote method invocation control into the system of Hill as modified because it provides the capability of communicating across different address spaces.

As per claim 7, Hill et al as modified do not explicitly teach remote server identifier for providing server identification. Birrell et al teach remote server identifier (hostnames) for providing server identifier. It would have been obvious to include server identifiers into the system of Hill because it provides the capability for associating an address with the server.

As per claim 8, Hill, Ludin in combination with Birrell teach remote method server identifier (endpoint) [Birrell : pp 15-16].

As per claim 9, Hill, Ludin in combination with Birrell teach remote method invocation identification (identifiers representing the object, the caller and the type of code) for controlling invocation of remote method [Birrell: pp 17-21].

As per claim 10, Hill, Ludin in combination with Birrell teach nameserver (name exported from a machine server) for providing server identification and remote server identifier initiating communication with nameserver to obtain the server identification of remote method [Birrell : pp 7-9]

As per claims 13, 17-20, refer to claims 3, 7-10 respectively for rejection and combination of references. It would have been obvious to embody these limitations as method.

As per claims 23, 27-30, refer to claims 3, 7-10 respectively for rejection and combination of references. It would have been obvious to embody these limitations as a computer program product.

8. Claims 2, 5, 6, 12, 15, 16, 22, 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al in view of Lundin as applied to claims 1, 11 and 21 and further in view of Mitchell et al ("An Overview of the Spring System", Proceedings of Compcon, February 1994).

As per claim 2, Hill et al as modified do not explicitly teach remote method reference detector for detecting whether remote method reference has been received in execution environment.

Mitchell et al teach a remote method reference detector (server creating an object reference) [page 5, section 7, last paragraph of page through page 6, line 4]. It would have been obvious to include within the system as taught by Hill et al as modified a method reference detector as taught by Mitchell because it provides the capability of guaranteeing that the correct data is being accessed.

As per claim 5, Hill et al as modified do not teach providing a separate address space for processing remote method from address space provided by execution

environment. Mitchell et al teach separate address space (servers operating in different address spaces from their clients) [page 3, section 3.1]. It would have been obvious to include within the system as taught by Hill et al as modified the capability of separate address space because it provides a mechanism for protecting applications against interfering with each other.

As per claim 6, it would be obvious that the address space provided within Hill et al as modified in combination with Mitchell et al can be provided by separate computers.

As per claims 12, 15, 16, refer to claims 2, 5, 6 respectively for rejection and combination of references. It would have been obvious to embody these limitations as a method.

As per claims 22, 25, 26, refer to claims 2, 5, 6 respectively for rejection and combination of references. It would have been obvious to embody these limitations as a computer program product.

9. Applicant's arguments filed 2/6/2003 have been fully considered but they are not persuasive.

Applicant argued that Hill does not teach retrieving stub from a server because (1) the stub as disclosed includes a declarations for the complete set of interfaces, (2) what is retrieved and what is loaded in Hill are different, (3) a proxy in Hill is created from a DLL resident on the client. (Remarks, pages 2-4).

The examiner respectfully disagrees. As to (1), while the argued feature that the stub includes a declarations for the complete set of interfaces is disclosed, it is not claimed. See claims 1-33. The claim language only requires a stub for a remote method. During examination, the claims are interpreted in light of applicant's specification, but the specification is not read into the claims. The proxy of Hill provides a set of interface(s) for invoking / facilitating invocation of a particular remote method (server stub 302, remote object 301), therefore, meeting stub as claimed as well as disclosed.

As to (2), as discussed for (1), the claim language only requires a stub for a remote method. Loading a class identifier is typically an integral part of loading the class

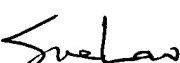
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(DLL) identified by the class identifier. The same is true for the proxy class and identifier of Hill. Further, Lundin teaches a client (client) retrieving (import) from a server (trader) an interface including both an identifier (X) and the code (produced by the Create method). See discussion of claim 1 for detail. When the teachings of Hill and Lundin are combined, it would be obvious to retrieve both the identifier and the code of the stub/interface from the server.

As to (3), the combination of Hill and Lundin would make obvious retrieving both the identifier and the code of the stub/proxy/interface from the server, as discussed regarding (2) above.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (703) 305 9678. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Sue Lao 

June 25, 2004